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Title: Rules of Use Report Engineering evaluations of nuclear material storage containers against the packaging requirements at TA-55

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Rules of Use Report

Engineering evaluations of nuclear material storage containers against the packaging requirements at TA-55.

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9-30-21

Los Alamos NATIONAL LABORATORY

Prepared for:	NMSDB
Prepared by:	The Container Engineering and Safety Team of ORI-2 and the Science and Engineering Team of AMPP-4

1.0 Introduction

A set of obligations in the yearly storage container surveillance program, ensures that a retrospective approach is applied with loaded containers in inventory to confirm compliance with all "users" to ensure nuclear material storage container requirements are being followed. Validation that packaged containers are properly used, within a specific set of container types prescribed "bounding conditions of use," is based on meeting requirements as identified in operating procedures associated with TA55-DOP-091, *TA-55 Nuclear Material Packaging*, and PA-RD-01022, *Nuclear Material Packaging Requirements*. The surveillance plan obligation requires the application of local area nuclear material accountability software or (LANMAS) to produce queries. The data queries are used to assess attributes of containers in storage these investigations are conducted on a bi-annual basis. This rules of use (ROU) compliance process ensures proper usage of storage containers as containment systems and therefore provides effective worker protection. It is structured as a supporting effort by implementing aspects of PA-AP-01207, *Nuclear Material Container Safety Management at TA-55*.

Characteristics of materials that establish bounding conditions of use include three key bounding criteria: (1) the worst-case radioactive material, (2) the maximum heat load, and (3) the chemical and physical forms. Beyond this, packaging configurations within the outermost containment boundary are also specified for various types of nuclear material contents. The complete scope of these focused reviews will also address nuclear material control and accountability (NMCA) data entry requirements associated with packing and unpacking, loading and unloading of containers. Essentially, all aspects of use outside of the glovebox line or in an open front hood are open to investigation and walk-down on an as-needed basis.

2.0 Rules of Use Methodology

LANMAS is the primary electronic database to initiate inquiries on all stored materials and packages, including material information and packaging information for each storage package. LANMAS is maintained by SAFE-NMCA personnel and updated by operations at LANL. It meets the requirements of DOE Manual 441.1-1 data-base requirements. Since a SAVY, if packaged outside of its authorization basis, is no longer designated as Manual-compliant, a key focus area specific to the SAVY is to ensure usage in accordance with design-specific technical basis documents, such as the SAVY Safety Analysis Report (SAR), as translated into TA-55 operating procedures. Authorized use of the SAVY in a non-Manual compliant status is also allowed under operating procedures via a designation as a Limited-Use Container (LUC) (formerly Transfer Container).

Compliance with the packaging rules that apply to LUCs was also assessed to ensure usage was within the restrictions of PA-RD-01022. During the query generation, packages and their associated contents were crosschecked against the LUC database to ensure that the packages were in fact out-of-compliance with the latest revision of the governing documents. All Hagan and locking ring drums that were created before July 13, 2013 are excluded from this engineering evaluation, as such packages were created before the governing documents (TA55-DOP-091 and PA-RD-01022 or their predecessor documents) were derived from the SAR; these documents did not incorporate Hagan or specific locking ring drums to the same ROU until this date. SAVY containers have been required to meet key aspects of the SAR since July 2011 when the first SAVY was packaged. As the governing documents are revised over time, the changes will drive new query search fields to ensure compliance. These new data fields will be added to the ROU queries, as appropriate, moving forward. The results of future evaluations shall be summarized in an annually-issued version of this report.

The issue discovery process is typically initiated by a query of the LANMAS system conducted by the nuclear material management team at the request of a container safety and management team SME. The results of the query are compared to the nuclear material packaging requirements found in PA-RD-01022. Containers identified to be improperly packaged per PA-RD-01022 are identified and documented. A corrective action document is created based on the examination of the issue via a walkdown of the spaces and completion of PA-AP-01220-FM1 Attachment A, *Nuclear Material Packaging Issue Evaluation.* The corrective action document is drafted internally, and formally reviewed by nuclear material container committee (NMCC) members, and upon approval will be released to the end user.

The effort identified for FY21 involved three lines of inquiry derived against the current versions of the governing documents, TA55-DOP-091, R12.1, and PA-RD-01022, R3-IPC2, addressing storage container requirements and including the following:

- Wattage exceeding 25 watts,
- Gross weights exceeding limits, and
- Restricted content in storage containers

An initial query earlier in the fiscal year involved a focused effort on the PF-4 vault with a follow-on query in the 4th quarter that encompassed usage LANL-wide. An ad-hoc ROU compliance verification effort occurs during the preparation of various item lists. These lists can either be the result of annual container surveillance planning activities or items that are selected specifically for the ROU effort. A validation phase occurs when Container SMEs observe the unpacking operations in the plutonium facility and the material form is seen.

A second component to the ROU methodology is the reporting of packaging issues identified during normal operations in PF-4. PF-4 operators are trained to identify packaging issues, and the packaging procedure includes a contingency section with steps to report and to mitigate the issue. Issues reported through this process are documented as part the ROU compliance process. This methodology is particularly important for identifying packaging issues in the PF-4 vault. The PF-4 vault procedure PA-DOP-01447 requires that operators inventory each location that is accessed and inspect each container during shelving and retrieving operations. The inspection includes handling each container to perform a swipe of the outside surface prior to verifying that the label matches the LANMAS inventory printout for that location.

A third component to the ROU methodology is the performance of walkdowns of storage locations. These walkdowns are typically performed by the Container Safety and Engineering Team. Walkdowns may be performed on a routine basis or to perform extent-of-condition observations related to a finding. A culture has been developed within nuclear material storage operations with regard to ROU awareness, to self-identify issues as they occur or be constantly observant to identify issues as they arise. Such oversite built into activities and processes have become a key aspect of compliance assurance.

3.0 Primary Findings

A total of 19 containers were identified in FY21 as being noncompliant with the requirements in PA-RD-01022 and are listed in Table 1. The specific details of each of the noncompliant containers can be found in Appendix B and C. The ROU queries identified 17 of the 19 containers, which include the following:

- Wattage exceeding 25 watts: 4 containers
- Gross weights exceeding limits: 0 containers
- Restricted content in storage: 12 containers

An additional three noncompliant containers were identified in FY21 as packaging issues outside of the ROU queries. These containers were either identified as packaging issues by PF4 operations staff or by the Container Engineering and Safety Team during walkdowns of non-vault locations outside of the glovebox line. These packaging issues included the following:

- SAVY-4000 outer container with a hermetic cap installed: 1 container
- SAVY-4000 outer container on LUC database found in the vault: 1 container
- SAVY-4000 outer container with PVC tape covering the filter vent holes: 1 container

Table 1, Summary of ROU findings

Container or Item Name	Container Size (qt.)	Container Type	Exceeds Wattage	Restricted Contents IDC	Abnormal Outer Packaging Configuration
012005076	5	SAVY-4000	N/A	N/A	Yes
031403044	3	SAVY-4000	N/A	N/A	Yes
NUCFIL-03 LANL- 83 3/06	5	Hagan	N/A	Yes	No
031403135	3	SAVY-4000	N/A	Yes	Yes
181398	5	Hagan	N/A	Yes	No
CH-086	8	Hagan	Yes	N/A	N/A
FCO291	5	Hagan	Yes	N/A	N/A
CH-090	8	Hagan	Yes	N/A	N/A
011705027	5	SAVY-4000	Yes	N/A	N/A
012001237	1	SAVY-4000	N/A	Yes	N/A
021803270	3	SAVY-4000	N/A	Yes	N/A
031712019	12	SAVY-4000	N/A	Yes	N/A
031712116	12	SAVY-4000	N/A	Yes	N/A
052003433	3	SAVY-4000	N/A	Yes	N/A
052003435	3	SAVY-4000	N/A	Yes	N/A
111501062	1	SAVY-4000	N/A	Yes	N/A
111603126	3	SAVY-4000	N/A	Yes	N/A
081305282	5	SAVY-4000	N/A	Yes	N/A
U-RLUOB-2018	1	SAVY-4000	N/A	Yes	N/A

The ROU query for identifying containers exceeding 25 watts identified four noncompliant containers: three Hagan and one SAVY-4000. Resolution of the finding involved packaging according to the limited-use container content and configuration, which allows for packages to have greater than 25 watts. This was to be accomplished by placing the loaded outer container inside another SAVY-4000 labeled as a limited-use container.

The ROU query for gross weights exceeding the container weight limits did not identify noncompliant containers. However, the container gross weight field is only populated for approximately 20 percent of the loaded containers. Entering the container gross is a requirement for TA55-DOP-091 since July 2013. However, operators have been entering the gross weight in the Remarks field rather than the container gross weight field per vault shelving requirements, and the Remarks field cannot be queried directly.

The ROU query for containers with restricted content identified 12 containers and resulted in two potential process deviations (PPDs) being called by the TA-55 Operations Center (OC). Resolution of the ROU findings and the PPDs is described in two NCS events: NCS-EVENT-21-041 (May 2021) and NCS-EVENT-21-072 (July 2021). In the first event, two Hagan containers were identified as being packaged with turnings. Per the criticality safety analyst, "The situations were determined to be safe and stable; The total masses in both locations is well below the total mass limits in both FMOs and the material types are allowed in their respective locations" (A. Bowles, May 2021). In the second event, a list of containers was identified as having restricted content and was compared against the LUC database to determine whether any the identified containers were actually properly packaged LUCs. If the restricted items were in fact packaged following the requirements for LUCs as defined in PA-RD-01022 they were removed from the list of items in question. Multiple containers were identified that contained restricted contents and high wattage items. The second event also had the involvement of the NCS division and the following summary is noted: "The situation was determined to be safe and stable; the containerized items were determined to be in compliance with CSP requirements after a review with NCS and ORI-2 personnel. Responding personnel concurred that items could be repackaged to be in compliance with the requirements in TA55-DOP-091 and PA-RD-01022." (H. Morbach, July 2021).

Additional noncompliant containers were identified by operations personnel and the Container Engineering and Safety Team outside of the ROU queries. The numbered statements below provide a brief summary of each of the cases. The specific details of each case can be found in Appendix B and C respectively for these areas of concern.

1. On April 21, 2021, it was discovered that an item in the vault was packed in an unallowable configuration. Although the outer container was a SAVY-4000, it was found to have a hermetic capped lid, which is not an approved outer container per PA-RD-01022. The team that discovered the item, which was packaged into a 3 qt. SAVY-4000, and over packed it into a 5 qt. SAVY-4000.

2. An item stored in the vault was discovered to be packaged in an unallowable configuration. Although the outer container was a SAVY-4000, the outer SAVY-4000 container was designated as a LUC, which is not an approved configuration per PA-RD-01022. PA-RD-01022 states in Section 5.3 that containers designated by label as LUCs must NOT be used as storage containers prior to being inspected and maintained by the packaging engineering team. Operators are not permitted to remove Transfer Container labels.

3. A SAVY-4000 container was found in the room floor location storage area with blue color PVC tape covering the diffusion holes on the lid of the container. The container also did not have a transfer container label applied, which is required as the contents are liquids. This condition was identified during PF-4, 100, 200, 300, and 400 area floor location walk-down as an extent of condition where container SMEs were looking for hermetic caps being used on outer containers. Below are some images that have been captured demonstrating the context of one of the cases.

NOTE: There is other specific information that is available upon request relating to these issues. However, due to the classification, and nature of the work to collect the data, images were not taken. The goal is to present these results to a broader audience.

Figure 1 Tape covering filter diffusion holes

Figure 2 Inner container

4.0 Corrective Actions

As a result of the identified non-compliance issues the container engineering and safety team worked and continues to work with the end users and programmatic owners of each case to assist with resolving the situation. These activities were carried out by following the guidance in PA-AP-01220, Section 5.3, *Corrective Action Document Released to End User.* Once an issue is identified, the corrective action document can be a simple, concise memo or a detailed report. The key follow on actions include "[1] WHEN all documents have been reviewed and signed by appropriate management, THEN ensure the memorandum or corrective actions plan is released to the end user" and "[2] Use the issues management system to facilitate the tracking and documentation of the actions recommended in any corrective actions documents from the NMCC, through the process owning (end users) division's management review board."

- In the case of NCS-EVENT-21-041, five such memos were generated for the end user and at the current time, these issues have been corrected.
- In the case of NCS-EVENT-21-072, multiple issues management (IM) actions have been assigned to the end users by the FOM during the official fact finding meeting and the associated memos are in working progress. These IM actions are tracked and managed by the TA-55 FOM. The estimated time for completion of the corrective actions by the program owners is 1 month, according to the TA-55 FOM. It is the responsibility of the line organizations in which these packages reside to correct the issues moving forward and report back to the TA-55 FOM.

The following is a summary of the actions that have actually been completed or have a corrective action plan approved by the nuclear material storage and disposition board (NMSDB) chair. The capped SAVY-4000 container was found in the PF-4 storage vault during other actives not directly related to the ROU effort initially. The packaging issue was identified by members of the AMPP-4 science and engineering team and shared with the ORI-2 container engineering and safety team. This finding was the driver for a walkdown of all rooms in the first floor of the plutonium facility conducted by the ORI-2 container SMEs. During this walkdown a piece of blue PVC tape was found covering the diffusion holes on the top of the SAVY-4000 container in the 100 area. The TA-55 OC was notified and the container CSE. A process deviation was declared, as the blue tape was not allowing the container to properly vent and was possibly inoperable. The owning organization expeditiously drafted a memo outlining the recovery plan for the item and the item was unloaded and inspected. Container packaging engineers were present for the repack and observed that there were was not corrosion concerns inside the container. The tape was removed from the filter by the glovebox operator and the items were repacked into a new container. The suspect container was released to the container engineering and safety team in order to conduct performance testing to prove the operability of the container and all tests have passed. All actions in the plutonium facility related to the C-AAC team have been resolved at this time. The actions for AMPP-3 will be worked according to the provided memos after inventory has been completed. The status of the gross weight items and high wattage items, and the (IM) actions from NCS-EVENT-21-072 are still unresolved and pending feedback from the TA-55 FOM.

The memos below represent the corrective actions documents that have been generated thus far:

1. C-AAC: 21-00369, Path Forward for Improper Packaging of Accountable Item Containing Turnings (restricted contents)

2. AMPP-3:2021-017, AMPP-3 Container (012005076 B/L) Extension and Recovery Request (LUC container in vault).

3. AMPP-3: 2021-014, AMPP-3 Over pack Extension Request, (Improper packaging configuration).

4. C-AAC: 2021-00345, Opening LTA Item containing Am with a closed filter (blue tape on filter).

5. C-AAC: 2021-00350, Opening Accountable Item Containing Combustible Materials (restricted content).

5.0 Recommendations

There is an apparent need for an updated training process that will specifically address the Use Every Time (UET) attachment with personnel that are being trained to TA55-DOP-091 and adding emphasis to the use of PA-RD-01022. Beyond the current focus on teaching personnel how to work through the tables to make the proper determinations, the training would place an extra emphasis on a practical aspect, where navigating and understanding the tables is demonstrated by choosing a specific case study or process scenario to work against. In the interest of better retention, it has been recommended to break up the training into separate classes. New training requirements are currently being updated with the ORI-1 training team. These classes could be titled as follows: Need for Safe Packaging, Understanding the Packaging Requirements, and Operation of the Containers (safe opening and closing). After the general courses are completed by all trainees, trainees would have an opportunity to practice prior to completing a performance demonstration would be conducted by the trainees and tailored to their specific process with the technical trainers. This would ensure that workers have a stronger mental picture of what is going on and what steps are actually required for their specific use of storage containers as a containment system, thereby instilling the proper mindset for the use of both TA55-DOP-091 and PA-RD-01022 to ensure safety and the proper containment of nuclear materials. Additional recommendations based on the completion of the rules of use engineering evaluation activity for FY21 are detailed below:

- The query data generation fidelity must be improved; it was determined during the fact finding after the second effort this fiscal year that there were some items in the population of concern that had not been identified in the original query. The ideal situation would have been if our team had captured this information during the generation of the original data query generation. Additionally, the gross weight field could be mined for package weight information. However, this datamining would be time consuming and should be targeted toward specific containers.

- The need for procedure revisions also became apparent; the suggested revisions to PA-AP-01220 include a modified and specific query request form. This form will outline the detailed requirements that can be chosen in support of a given query. The form will be added to the appendix of the procedure. It would also serve as a record of the exact research that was done at the time the query was generated.

- Throughout the ROU effort the need for improved communication with the affected programmatic organizations was observed. It was also discovered during that fact finding that some line managers were unfamiliar with the UET attachments that are attached to TA55-DOP-091. In addition to this, the applicability of the governing documents, i.e., TA55-DOP-091 and PA-RD-01022 for other locations throughout the laboratory besides just the plutonium facility must be evaluated. Manual compliance must be maintained accompanied with the flexibility to adapt as needed to ensure safety in containment. It was found that some IDC restrictions involved packages that are located at RLUOB.

- There is an effort within the programmatic organizations that operate at the plutonium facility to update their associated governing procedures to reference the appropriate packaging sections of TA55-DOP-091 with respect to nuclear material packing and achieve Manual 441.1-1 compliance. This is also to help manage and control the items that may eventually enter the plutonium facility and to ensure DOE M441.1-1 compliance at the time of entry into the TA-55 PA.

- It is recommended that specific queries be executed on a regular basis, such as expired limited-use containers. This effort would identify containers that have exceeded their annual visual inspection date and/or their 5 year required maintenance testing cycle.

- Authorized contents, as established by the bounding conditions of use for materials, include total package weight, wattage, material form, and proper IDC coding. Such factors also incorporated into the current relative risk ranking methodology as well. By using this established process that has been implemented for determining the perceived risk of the current nuclear material storage packages throughout the plutonium facility, items that are considered high risk or items that may be moving towards becoming high risk should be monitored at a greater frequency under the ROU evaluation process. This could include walkdowns of process lines that are known to generate items that are generally considered to be high risk such as MSE, DOR, ER salt lines and items in the Pu-238 operational areas.

- It is recommended that results be included results from the container surveillance program. Any container processed under the storage container surveillance program also serves as a double check rules of use requirements are being followed. Any compliance issues identified in this subset of the population could drive specific queries of the larger population; especially to evaluate the extent of condition. In any case surveillance data collected is simultaneously credited as an ROU exercise as well. In this sense, ROU review also has a random aspect to it, as outlined in the Surveillance Plan, at least for SAVYs.

- It is recommended that a trending analysis summary of the ROU queries be created and maintained, as the ROU effort moves forward certain aspects of the governing procedures will change. This will require updates to the ROU queries that are executed in the future. It will be imperative to track the results year by year to capture trends, the trending analysis of the violations will allow the team to focus or shift efforts to address the needed area of concern. This could be training, new container designs, or procedure revisions as necessary

- It is recommended that routine general ROU walkdowns of the plutonium facility be conducted by members of the containers engineering and safety team. These walkdowns will be targeted looking for improper packaging and abnormal conditions associated with nuclear material storage containers in general.

- It is recommended that a mass balance be added near the entrance of the storage vault and PA-DOP-01447, *Requirements and Actions for Shelving and/or Retrieving Items in the SNM Vault*, possibly be revised. It is required that the inner container is specified along with the gross weight. However, this information is placed in the remarks field, which is not easily queried. Recommend that the vault procedure requires that these information are placed in the appropriate fields rather than/in addition to the remarks field.

- As the ROU processing efforts mature over time, trends can be identified and ongoing queries conducted in more problematic areas of concern.

NOTE: The appendix sections below outline the specific details regarding the cases that were found during each event. The point of including the forms is not to place blame or assign fault it is an effort to provide the best level of detail available for these cases in order to further understanding of the causes.

6.0 References

TA-55-DOP-091 R12.1, *Nuclear Material Packaging* eff 11.25/2020

PA-RD-01022, R3-IPC2, *TA-55 Nuclear Material Packaging Requirements* eff 3/18/2020

PA-AP-01220, R0, *Nuclear Material Storage Containers Rules of Use and Performance Evaluation*

NCS-EVENT-21-041, *Material Type not allowed in container according to PA-RD-01022*

NCS-EVENT-21-072, *Material Form not allowed per PA-RD-01022 and TA55-DOP-091*

Appendix A, Unclassified Memos *only the first page of each memo is shown

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Memorandum

ARIES: AMPP-3

107984

To: Cristy Abeyta PPM -D0 Cristy L. Abeyta 19 May 2021

Thru: Tristan McDonald, ES-55 TRISTAN MCDONALD (Affiliate) Digitally signed by TRISTAN MCDONALD (Affiliate) Date: 2021.05.04 06:34:58 -06'00'

Thru: David Grow, 0R -2 DAVID GROW (Affiliate)

Thru: Chastity Kolar, AMPP-3 Chastity Kolar Digitally signed by Chastity Kolar Date: 2021.05.03 15:59:28 -06'00'

From: Susan Klimowicz AMPP-3 Susan Klimowicz Digitally signed by Susan Klimowicz Date: 2021.05.03 14:04:07 -06'00'

Phone: 505-667-3542

Symbol: AMPP-3 2021-014

Date: April 29, 2021

Derivative Classification Review			
☒ UNCLASSIFIED ☐ Export Controlled Information ☐ Official Use Only ☐ Unclassified Controlled Nuclear Information Guidance Used: N/A		☐ CONFIDENTIAL ☐ SECRET ☐ Restricted Data ☐ Formerly Restricted Data ☐ National Security Information Guidance Used:	
DC/RO Name/Z Number: Rebecca Martinez / 108960	Organization: AMPP-1	Signature: REBECCA MARTINEZ (Affiliate) Digitally signed by REBECCA MARTINEZ (Affiliate) Date: 2021.05.03 15:22:22 -06'00'	Date: 5/3/2021

Subject: AMPP-3 Overpack Extension Request

Description of the event:

On April 21, 2021 it was discovered that an item in the vault was packed in an unallowable configuration. Although the outer container is a SAVY-4000, it was found to have a hermetic capped lid, which is not an approved outer container, per PA-RD-01022. The team that discovered the item overpacked it into a 5qt SAVY and the owning organization was notified.

PA-RD-01022 states that once an improperly containerized item is overpacked, putting it in a safe configuration, the owning organization has 10 days to either resolve the containerization issue or to re-do the overpack, unless an approved variance is in place.

Due to the timing of the discovery being at the beginning of inventory, it has been discussed and approved that this item will be repacked into an approved SAVY post-release of inventory. This memorandum allows the current overpacked configuration to remain in compliance after extending 10 days.

Pulling information from LANMAS, it is noted that the item configuration is currently approximately 3.6kg of C211, MT52 material bagged out 1qt taped slip top, with surrounding shielding, in a 3qt SAVY hermetically capped, now overpacked in a 5qt SAVY. The material is well characterized and all characteristics outlined in DOEM 441.1-1 have been evaluated and in its current overpacked configuration meet all design criteria. Once repacked, all requirements from PA-RD-01022 and DOE M 441.1-1 will remain met.

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Memorandum

Actinide Analytical Chemistry (C-AAC)

To: Cristy Abeyta, NMSDB Chair, E597
Through: David Grow, NMCC Chair, E541
From: Stephanie Velardo, C-AAC, E554
Phone: 505-665-2812
Symbol: C-AAC 21-00369
Date: August 30, 2021

Subject: Path Forward for Improper Packaging of Accountable Item Containing Turnings

Situation

There is a U-235 turnings item in the C-AAC safe in PF-4.

Item Details:
- ID: 12057
- MT 38
- IDC M74J
- ElementWt 34.2 g

Packaging Details:
- Layer 1: Doubled Ended Swagelok
- Layer 2: Two horsetailed bags
- Layer 3: Vollrath with taped lid in one horse-tailed bag
- Layer 4: 3 Qt SAVY TID 037445

Currently, this U turning item is in an infracted state because the packaging is not in compliance with TA55-DOP-091 R12.1, *TA-55 Nuclear Material Packaging*, for a transfer container. The packaging is not in compliance because metal turnings are not allowed to be packaged in SAVY storage containers. Below details the history of this item and a path forward to exiting the infraction.

Item History

C-NR requested item 12057 from CMR in 2019. The item was shipped from CMR to the C-AAC laboratory space in PF-4 as an intermediate before shipping to TA-48. The item was never shipped to TA-48 because C-NR had received additional items from CMR and ultimately item 12057 was no longer needed.

The item has remained sealed since it was received by C-AAC in PF-4 in 2019. At this time, the packaging was considered to be in a safe and stable configuration for a transfer container.

Path Forward

C-AAC Management understands that this packaging configuration is in an infracted state for a metal turnings transfer container. To exit the infraction and be in compliance with TA-55-DOP-091, C-AAC proposes the following actions:

- A hermetic cap will be placed on the 3 QT SAVY. This will act as the hermetically sealed inner container.

- An empty 5 QT SAVY will be inspected for its integrity before the application of a transfer container label.

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Memorandum

AMPP-3: ARIES

To:	Cristy Abeyta, PPMI-DO, MS E597
Through:	Tristan McDonald, ES-55, MS E575
Through:	David Grow, ORI-2, MS E541
From:	Chastity Kolar, AMPP-3, MS E530
Phone:	505-667-3542
Symbol:	AMPP-3:2021-017
Date:	May 1, 2021

Cristy L Abeyta Digitally signed by Cristy L Abeyta Date: 2021.05.13 12:35:23 -06'00'

TRISTAN MCDONALD (Affiliate) Digitally signed by TRISTAN MCDONALD (Affiliate) Date: 2021.05.13 11:03:36 -06'00'

DAVID G OW (Affiliate) Digitally signed by DAVID GROW (Affiliate) Date: 2021.05.13 10:43:57 -06'00'

Chastity Kolar Digitally signed by Chastity Kolar Date: 2021.05.12 16:38:15 -06'

Subject: AMPP-3 Container (012005076 B/L) Extension and Recovery Request

Description of the Event:

An item stored in the vault was discovered to be packaged in an unallowable configuration. Although the outer container is a SAVY-4000, the outer SAVY-400 container was designated as a Transfer Container, which is not an approved configuration per PA-RD-01022. PA-RD-01022 states in Section 5.3 that containers designated by label as Transfer Containers must NOT be used as Storage containers prior to being inspected and maintained by the packaging engineering team. Operators are not permitted to remove Transfer Container labels.

Due to the timing of the discovery being at the beginning of inventory, it has been discussed and approved that this item will be repackaged into an approved storage SAVY post-release of inventory.

It is noted that the item configuration is material type 52 with an item description code of C211. The material is well characterized and all characteristics outlined in DOE M 441.1-1 have been evaluated. Once, repackaged, all requirements from PA-RD-01022 and DOE M 441.1-1 will remain met.

Recovery plan to return to normal operations:

After the approved release from inventory or 5 weeks after the issuance of this memorandum, whichever occurs first, AMPP-3 will complete the following actions:

Task:	Action:
1	Evaluate all needed work location identified to repackage item.
2	Retrieved item from vault.
3	Transfer item to a material management room.
4	In open front hood remove, break TID with MBA Custodian present to preserve measurement.

Appendix B, NCS-EVENT-21-041

Attachment A, Nuclear Material Packaging Evaluation

(Page 1 of 1)

Focus Area (Query) Objective:	Transfer Container in Vault (Label Removed by operators)
Date	3-31-21
Time	2:47 PM
Container SME Z#	337432, John Davis
Line Org POC Z#	110522, Chastity Kolar
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	SAVY
Container Size	5 QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	C211
MT Code	52
Description	An item stored in the vault was discovered to be packaged in an unallowable configuration. Although the outer container is a SAVY-4000, the outer SAVY-4000 container was designated as a Transfer Container, which is not an approved configuration per PA-RD-01022.
Proposed Corrective Action	Evaluate all needed work locations identified to repackage item. Retrieved item from vault. Transfer item to a material management room. In open front hood remove, break TID with MBA Custodian present to preserve measurement. Open outer SAVY and have RCT survey opened outer containers. If free from detectable contamination, remove inner contents and place in approved SAVY-4000 storage container. If not free from detectable contamination, introduce outer container with inner contents in-line and arrange bag-out of inner contents. Properly apply TID to SAVY-400 storage container. Return item to vault for storage. Arrange for inspection and removal of Transfer Container label from SAVY-4000.

Attachment A, Nuclear Material Packaging Evaluation

(Page 1 of 1)

Focus Area (Query) Objective:	Hermetic Cap found installed on outer SAVY-4000 container in PF-4 vault.
Date	4-21-22
Time	Approximately 4:00 PM
Container SME Z#	Tristan Karns, 281087
Line Org POC Z#	Chastity Kolar,110522
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	SAVY-4000
Container Size	3 Quart
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	None entered
MT Code	None entered
Description	The capped outer SAVY (not allowed by TA55-DOP-091) was identified in the vault on April 21st and was immediately over packed. According to TA55-DOP-091 this overpack configuration is required to be repackaged within ten (10) working days after the overpack occurred or an extension would need to be obtained through the NMSDB (see Section 1.2 of TA55-DOP-091). Because inventory is currently underway and there is no hard date for when the container can be retrieved from the vault a memo should be written for this variance. The variance process is laid out in PA-RD-01022 Section 5.6
Proposed Corrective Action	Providing an update to the shelving procedures for the vault workers to include looking for this particular issue as they are going about their normal process, and updating the checklist for containers entering the vault.

Attachment A, Nuclear Material Packaging Evaluation

(Page 1 of 1)

Focus Area (Query) Objective:	Restricted IDC's K code, per TA55-DOP-091 & PA-RD-01022
Date	5-6-21
Time	4:00 pm
Container SME Z#	337432, John Davis
Line Org POC Z#	224185, John Auxier II
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	Hagan
Container Size	5 QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	K000
MT Code	52
Description	Combustible coded item in floor location. This items was packaged in 2007, so it precedes the requirements of the TA55-DOP-091, PA-RD-01022.
Proposed Corrective Action	The container Hagan SN NUCFIL-03 LANL- 83 3/06, has been found with restricted contents. C-AAC Management agrees that the container should removed from the floor and be re-packaged as it is no longer in compliance with TA55-DOP-091 or PA-RD-01022. Thus C-AAC personnel will perform the following actions. After the MBA is released from inventory, C-AAC will coordinate to have RCT, NPI-6 (support for VE/VI), ORI-2 container board personnel, and CCP present to open the container. This item does contain an accountable amount of material. The container will be introduced into, where the TID will be removed. Images will be taken during the operations. Once the TIDs are removed, the Hagan will be opened and the contents will be inspected by all groups present. If the contents are found to be in an acceptable condition. The Hagan will be closed and placed into a POC container IF the container or the contents do not meet the requirements to be introduced into the POC container, the Hagan and the contents will be moved be C-AAC to another location for later disposal as per the direction of NPI-6 and CCP personnel.

Attachment A, Nuclear Material Packaging Evaluation

(Page 1 of 1)

Focus Area (Query) Objective:	PF-4, 100,200,300, and 400 area floor location walk-down. Container SME's were looking for hermetic caps being used on outer containers.
Date	4-22-21
Time	8:30 AM to 12:00 (noon)
Container SME Z#	Tristan Karns 281087 & John Davis 337432
Line Org POC Z#	Dung Vu, 178404, C-AAC
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	SAVY
Container Size	3 QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	None entered
MT Code	None entered
Description	Container SN 031403135B/L was found in the room floor location storage areawith blue color PVC tape covering the diffusion holes on thelid of the container. The container also did not have a transfer container label applied, which is required as the contents are liquids.
Proposed Corrective Action	Apply transfer container label and have end-user operators remove the PVC tape from the diffusion holes of the lid.

Attachment A, Nuclear Material Packaging Evaluation

(Page 1 of 1)

Focus Area (Query) Objective:	Restricted IDC's Pu Turing's in safe
Date	5-6-21
Time	4:00 PM
Container SME Z#	337432, John Davis
Line Org POC Z#	100761, Mike Ramos
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	Hagan
Container Size	5QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	M47J
MT Code	52
Description	Item was found in LANMAS system to be coded as MXXJ Metal Turnings.
Proposed Corrective Action	Per MST-16's in depth research into this item MESAMPLE-1 it was discovered to be a miscoded item, meaning the item codewas not imputed into LANMAS correctly.

NCS-EVENT-21-041

Event Date: 2021-05-06

Event Time: 4:30 PM

FMO ID: PF4-F124-00

Room: 124

Recorded By: A. Bowles

Event Title: Material Type not allowed in container accordning to PA-RD-01022

Detailed Description: At approximately 4:30pm on 5/6/21, A potential process deviation was called.

ORI-2 was performing a packaging rules and regulations analysis and found two containers that were not in compliance with PA-RD-01022. The rooms were red lit and responding personnel met in the operations center to discuss the situation.

During ORI-2's analysis, it had been discovered that two Hagans in two different FMOs were not be in compliance with PA-RD-01022 packaging requirements. The IDCs listed on the SLIP (PF4-F124-00; compound and PF4-S13A-00; turnings) are not allowed to be packaged in Hagans due to pyrophoric and corrosive material characteristics.

The situations were determined to be safe and stable; The total masses in both locations is well below the total mass limits in both FMOs and the material types are allowed in their respective locations), but due to the time of day and week, the rooms were to remain red lit until at least the following Monday (05-10-21) and until more research could be performed on the history of each of those items.

The containerized turnings in the safe (PF4-S13A-00) are in compliance with all requirements on the CSP; Turnings can be treated under metal and Hagans are considered water-resistant according to PA-RD-01009.

The compound in PF4-F124-00 is also in compliance with all requirements on the CSP. It is believed that the item is actually cheese cloth that was used with hydrochloric acid. The CSP Allows compounds and the item is packaged in a TA55-DOP-091 approved container (Hagan).

Both of these deviations are Level 5 infractions. There was "failure to comply with a facility-specific requirement that does not adversely affect the criticality safety margin of the process" in both locations.

Responding Personnel:

NCS CSA(s):	A Bowles Tomaszewski
Operations (CSO, ORS, ORM, FMH, Operators, ...):	John Auxier (ORS - CA-AC), Mike Ramos (ORS-MST-16), John Davis (ORI-2),
Engineering (SME, Process Engineer, ...):	Manuel Urioste (NMCA)
Facility (FOD, FOM, ...):	Derek Dunlavy (FOM)
DOE/NNSA (facility rep, LASO, ...):	Dan Lopez

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Appendix C, NCS-EVENT-21-072

Attachment A, Nuclear Material Packaging Evaluation

(Page 1 of 1)

Focus Area (Query) Objective:	High Wattage Issue exceeds 25 Watts
Date	7-22-21
Time	12:15 PM
Container SME Z#	281087 / 337432 John Taylor Davis DN: c=US, o=U.S. Government, ou=Department of Energy, digitally signed by John Taylor Davis ou=Los Alamos National Laboratory, ou=People, serialNumber=337432, cn=John Taylor Davis Date: 2021.08.16 15:05:15 -06'00'
Line Org POC Z#	147762, Viviana Balzaretti Maggi, AMPP-1
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	Hagan
Container Size	8QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	C20E
MT Code	83
Description	This top level item CH-086, contains items that are high wattage the content is currently loaded in a Hagan storage container, which is a procedural violation of TA55-DOP-091 and PA-RD-01022 as it exceedsthe 25 watt limit.
Proposed Corrective Action	Over pack the current Hagan container into the next larger size SAVY-4000 container and apply a limited use container label. Following the instructions listed in table 7 #'s 8 or 9 depending on the specific case in PA-RD-01022.

Attachment A, Nuclear Material Packaging Evaluation

(Page 1 of 1)

Focus Area (Query) Objective:	High Wattage Issue exceeds 25 Watts
Date	7-22-21
Time	12:15 PM
Container SME Z#	281087 / 337432 John Taylor Davis Digitally signed by John Taylor Davis ou=Los Alamos National Laboratory, ou=People, DN: c=US, o=U.S. Government, ou=Department of Energy, serialNumber=337432, cn=John Taylor Davis Date: 2021.08.16 15:06:00 -06'00'
Line Org POC Z#	147762, Viviana Balzaretti Maggi, AMPP-1
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	Hagan
Container Size	5QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	C20E
MT Code	83
Description	This top level item container FCO291 is high wattage content that is currently loaded in a Hagan storage container, which is a procedural violation of TA55-DOP-091 and PA-RD-01022 as it exceedsthe 25 watt limit.
Proposed Corrective Action	Over pack the current Hagan container into the next larger size SAVY-4000 container and apply a limited use container label. Following the instructions listed in table 7 #'s 8 or 9 depending on the specific case in PA-RD-01022.

Attachment A, Nuclear Material Packaging Evaluation

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Focus Area (Query) Objective:	High Wattage Issue exceeds 25 Watts
Date	7-22-21
Time	12:15 PM
Container SME Z#	281087 / 337432 John Taylor Davis Digitally signed by John Taylor Davis Energy, ou=Los Alamos National Laboratory, ou=People, DN: c=US, o=U.S. Government, ou=Department of serialNumber=337432, cn=John Taylor Davis Date: 2021.08.16 15:06:20 -06'00'
Line Org POC Z#	147762, Viviana Balzaretti Maggi, AMPP-1
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	Hagan
Container Size	8QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	C20E
MT Code	83
Description	This top level item container CH-090 has high wattage items that are currently loaded in a Hagan storage container, which is a procedural violation of TA55-DOP-091 and PA-RD-01022 as it exceeds the 25 watt limit.
Proposed Corrective Action	Over pack the current Hagan container into the next larger size SAVY-4000 container and apply a limited use container label. Following the instructions listed in table 7 #'s 8 or 9 depending on the specific case in PA-RD-01022.

Attachment A, Nuclear Material Packaging Evaluation

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Focus Area (Query) Objective:	High Wattage Issue exceeds 25 Watts
Date	7-22-21
Time	12:15 PM
Container SME Z#	281087 / 337432 John Taylor Davis Digitally signed by John Taylor Davis DN: c=US, o=U.S. Government, ou=Department of Energy, ou=Los Alamos National Laboratory, ou=People, serialNumber=337432, cn=John Taylor Davis Date: 2021.08.16 15:07:05 -06'00'
Line Org POC Z#	147762, Viviana Balzaretti Maggi, AMPP-1
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	SAVY-4000
Container Size	5QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	C20E
MT Code	83
Description	This top level item SN 011705027B has high wattage content that is currently loaded in a SAVY-4000 storage container, which is a procedural violation of TA55-DOP-091 and PA-RD-01022 asit exceeds the 25 watt limit.
Proposed Corrective Action	Unload current SAVY-4000 container inspect and apply limited use container label. Or over pack into the next larger size SAVY-4000 container and apply a limited use container label. Following the instructions listed in table 7 #'s 8 or 9 depending on the specific case in PA-RD-01022.

Attachment A, Nuclear Material Packaging Evaluation

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Focus Area (Query) Objective:	Restricted IDC per PA-RD-01022
Date	7-22-21
Time	12:15 PM
Container SME Z#	281087 / 337432 John Taylor Davis Digitally signed by John Taylor Davis ou=Los Alamos National Laboratory, ou=People, DN: c=US, o=U.S. Government, ou=Department of Energy, serialNumber=337432, cn=John Taylor Davis Date: 2021.08.16 13:57:33 -06'00'
Line Org POC Z#	249756, Hope Quintana, AMMP-4
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	SAVY- 4000
Container Size	1QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	L14R
MT Code	12
Description	This top level item SN 012001237B is a liquid content that is currently loaded in a SAVY-4000 storage container, which isa procedural violation of TA55-DOP-091 and PA-RD-01022.
Proposed Corrective Action	Unpack the container, visually inspect the container and apply a limited use container label. Or over pack the current SAVY-4000 container into the next larger size and apply a limited use container label. Following the instructions listed in table 7 #2 in PA-RD-01022.

Attachment A, Nuclear Material Packaging Evaluation

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Focus Area (Query) Objective:	Restricted IDC per PA-RD-01022
Date	7-22-21
Time	12:15 PM
Container SME Z#	281087 / 337432 John Taylor Davis Digitally signed by John Taylor Davis .ou=Los Alamos National Laboratory .ou=People, DN: c=US, o=U.S. Government, ou=Department of Energy, serialNumber=337432, cn=John Taylor Davis Date: 2021.08.16 14:08:41 -06'00'
Line Org POC Z#	180205, Steve Wilson , C-AAC
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	SAVY-4000
Container Size	3QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	L523
MT Code	25
Description	This top level item SN 021803270B, has liquid contents that are currently loaded in a SAVY-4000 storage container, which is a procedural violation of TA55-DOP-091 and PA-RD-01022.
Proposed Corrective Action	Unpack the container, visually inspect the container and apply a limited use container label. Or over pack the current SAVY-4000 container into the next larger size and apply a limited use container label. Following the instructions listed in table 7 #2 in PA-RD-01022.

Attachment A, Nuclear Material Packaging Evaluation

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Focus Area (Query) Objective:	Restricted IDC per PA-RD-01022
Date	7-22-21
Time	12:15 PM
Container SME Z#	281087 / 337432 John Taylor Davis Digitally signed by John Taylor Davis DN: c=US, o=U.S. Government, ou=Department of Energy, ou=Los Alamos National Laboratory, ou=People, serialNumber=337432, cn=John Taylor Davis Date: 2021.08.16 14:44:09 -06'00'
Line Org POC Z#	101670, Kent Abney, AMPP-4
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	SAVY-4000
Container Size	12QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	K150
MT Code	38, 52
Description	This top level item, SN 031712019B has a combustible content that is currently loaded in a SAVY-4000 storage container, which is a procedural violation of TA55-DOP-091 and PA-RD-01022.
Proposed Corrective Action	Unpack the container, visually inspect the container and apply a limited use container label. Or over pack the current SAVY-4000 container into the next larger size and apply a limited use container label. Following the instructions listed in table 7 #6 in PA-RD-01022.

Attachment A, Nuclear Material Packaging Evaluation

(Page 1 of 1)

Focus Area (Query) Objective:	Restricted IDC per PA-RD-01022
Date	7-22-21
Time	12:15 PM
Container SME Z#	281087 / 337432 John Taylor Davis Digitally signed by John Taylor Davis Energy, ou=Los Alamos National Laboratory, ou=People, DN-C=US, O=U.S. Government, ou=Department of serialNumber=337432, cn=John Taylor Davis Date: 2021.08.16 14:45:38 -06'00'
Line Org POC Z#	110522,Chastity N. Kolar, AMPP-3
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	SAVY-4000
Container Size	12 QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	K000
MT Code	38,52
Description	This top level item, SN 031712116B has a combustible content that is currently loaded in a SAVY-4000 storage container, which is a procedural violation of TA55-DOP-091 and PA-RD-01022.
Proposed Corrective Action	Unpack the container, visually inspect the container and apply a limited use container label. Or over pack the current SAVY-4000 container into the next larger size and apply a limited use container label. Following the instructions listed in table 7 #6 in PA-RD-01022.

Attachment A, Nuclear Material Packaging Evaluation

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Focus Area (Query) Objective:	Restricted IDC per PA-RD-01022
Date	7-22-21
Time	12:15 PM
Container SME Z#	281087 / 337432 John Taylor Davis Digitally signed by John Taylor Davis ou=Los Alamos National Laboratory, ou=People, DN: c=US, o=U.S. Government, ou=Department of Energy, serialNumber=337432, cn=John Taylor Davis Date: 2021.08.16 14:46:46 -06'00'
Line Org POC Z#	110522,Chastity N. Kolar, AMPP-3
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	SAVY-4000
Container Size	3QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	K000
MT Code	38,52
Description	This top level item SN 052003433B, has a combustible content thatis currently loaded in a SAVY-4000 storage container, whichis a procedural violation of TA55-DOP-091 and PA-RD-01022.
Proposed Corrective Action	Unpack the container, visually inspect the container and apply a limited use container label. Or over pack the current SAVY-4000 container into the next larger size and apply a limited use container label. Following the instructions listed in table 7 #6 in PA-RD-01022.

Attachment A, Nuclear Material Packaging Evaluation

(Page 1 of 1)

Focus Area (Query) Objective:	Restricted IDC per PA-RD-01022
Date	7-22-21
Time	12:15 PM
Container SME Z#	281087 / 337432 John Taylor Davis Digitally signed by John Taylor Davis, ou=Los Alamos National Laboratory, ou=People, DN: c=US, o=U.S. Government, ou=Department of Energy, serialNumber=337432, cn=John Taylor Davis Date: 2021.08.16 14:48:02 -06'00'
Line Org POC Z#	110522,Chastity N. Kolar, AMPP-3
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	SAVY-4000
Container Size	3QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	K000
MT Code	38,52
Description	This top level item SN 052003435B, has a combustible content that is currently loaded in a SAVY-4000 storage container, which is a procedural violation of TA55-DOP-091 and PA-RD-01022.
Proposed Corrective Action	Unpack the container, visually inspect the container and apply a limited use container label. Or over pack the current SAVY-4000 container into the next larger size and apply a limited use container label. Following the instructions listed in table 7 #6 in PA-RD-01022.

Attachment A, Nuclear Material Packaging Evaluation

(Page 1 of 1)

Focus Area (Query) Objective:	Restricted IDC per PA-RD-01022
Date	7-22-21
Time	12:15 PM
Container SME Z#	281087 / 337432 John Taylor Davis Digitally signed by John Taylor Davis Energy, ou=Los Alamos National Laboratory, ou=People, DN: C=US, o=U.S. Government, ou=Department of serialNumber=337432, cn=John Taylor Davis Date: 2021.08.16 14:48:57 -06'00'
Line Org POC Z#	180205, Steve Willson, C-AAC
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	SAVY-4000
Container Size	1QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	R590
MT Code	52
Description	This top level item SN 111501062B, has an over pressure related content that is currently loaded in a SAVY-4000 storage container, which is a procedural violation of TA55-DOP-091and PA-RD-01022.
Proposed Corrective Action	Unpack the container, visually inspect the container and apply a limited use container label. Or over pack the current SAVY-4000 container into the next larger size and apply a limited use container label. Following the instructions listed in table 7 #3 in PA-RD-01022.

Attachment A, Nuclear Material Packaging Evaluation

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Focus Area (Query) Objective:	Restricted IDC per PA-RD-01022
Date	7-22-21
Time	12:15 PM
Container SME Z#	281087 / 337432 John Taylor Davis Digitally signed by John Taylor Davis ou=Los Alamos National Laboratory, ou=People, DN: C=US, o=U.S. Government, ou=Department of Energy, serialNumber=337432, cn=John Taylor Davis Date: 2021.08.16 14:49:55 -0600
Line Org POC Z#	180205, Steve Willson, C-AAC
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	SAVY-4000
Container Size	3QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	L523
MT Code	30
Description	This top level item SN 111603126B, contains liquid contents that are currently loaded in aSAVY-4000 storage container, which is a procedural violation of TA55-DOP-091 and PA-RD-01022.
Proposed Corrective Action	Unpack the container, visually inspect the container and apply a limited use container label. Or over pack the current SAVY-4000 container into the next larger size and apply a limited use container label. Following the instructions table 7 #2 in PA-RD-01022.

Attachment A, Nuclear Material Packaging Evaluation

(Page 1 of 1)

Focus Area (Query) Objective:	Restricted IDC per PA-RD-01022
Date	7-22-21
Time	12:15PM
Container SME Z#	281087 / 337432 John Taylor Davis Digitally signed by John Taylor Davis Energy, ou=Los Alamos National Laboratory, ou=People, DN: c=US, o=U.S. Government, ou=Department of serialNumber=337432, cn=John Taylor Davis Date: 2021.08.16 15:03:21 -06'00'
Line Org POC Z#	095534, David M. Romero TA55-PMDS
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	SAVY-4000
Container Size	5QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	K000
MT Code	42
Description	This top level item container SN 081305282B, has a combustible content that is currently loaded in a SAVY-4000 storage container, which isa procedural violation of TA55-DOP-091 and PA-RD-01022.
Proposed Corrective Action	Unpack the container, visually inspect the container and apply a limited use container label. Or over pack the current SAVY-4000 container into the next larger size and apply a limited use container label. Following the instructions listed in table 7 #6 in PA-RD-01022.

Attachment A, Nuclear Material Packaging Evaluation

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Focus Area (Query) Objective:	Restricted IDC per PA-RD-01022
Date	7-22-21
Time	12:15 PM
Container SME Z#	281087 / 337432 John Taylor Davis Digitally signed by John Taylor Davis Energy, ou=Los Alamos National Laboratory, ou=People, DN: c=US, o=U.S. Government, ou=Department of serialNumber=337432, cn=John Taylor Davis Date: 2021.08.16 15:04:02 -06'00'
Line Org POC Z#	180205, Steve Willson, C-AAC
As Found Conditions as indicated in LANMAS and validated in the field:	
Container Type	SAVY-4000
Container Size	1QT
Inner Container Type	N/A
Inner Container Size	N/A
Is a Bag-out Bag Present?	N/A
IDC Code	M74J
MT Code	37
Description	This top level item container U-RLUOB-2018, has pyrophoric content that is currently loaded in a SAVY-4000 storage container, which is a procedural violation of TA55-DOP-091 and PA-RD-01022.
Proposed Corrective Action	Apply a hermetic cap on the SAVY-4000 and over pack the capped SAVY-4000 container into the next larger size and apply a limited use container label. Following the instructions table 7 #10 in PA-RD-01022.

NCS-EVENT-21-072

Event Date: 2021-07-22

Event Time: not specified

FMO ID: PF4-F124-00

Room: 124

Recorded By: H. Morbach

Event Title: Material Form not allowed per PA-RD-01022 and TA55-AP-090

Detailed Description: ORI-2 was performing a packaging rules and regulations analysis and found containers that were not in compliance with PA-RD-01022 or TA55-AP-090. The rooms were red lit and responding personnel met in the operations center to discuss the situation.

The situation was determined to be safe and stable; the containerized items were determined to be in compliance with CSP requirements after a review with NCS and ORI-2 personnel. Responding personnel concurred that items could be repackaged to be in compliance with the requirements in TA55-AP-090 and PA-RD-01022.

This event and deviation from compliance with these documents is a Level 5 infraction. There was "failure to comply with a facility-specific requirement that does not adversely affect the criticality safety margin of the process" in the locations cited.

Responding Personnel:

NCS CSA(s):	Hannah Morbach, A Bowles Tomaszewski, Ning Zhang
Operations (CSO, ORS, ORM, FMH, Operators, ...):	John Davis (ORI-2), Tristan Karns (ORI-2)
Engineering (SME, Process Engineer, ...):	Manuel Urioste (NMCA)
Facility (FOD, FOM, ...):	Stu McKernan
DOE/NNSA (facility rep, LASO, ...):	not specified

Event Identification: ☑ FMH/ORS/ORM ☐ NCSD/FOD ☐ NNSA/LASO ☐ DOE-HQ/DNFSB

Fact Finding (if applicable): not specified

Recovery Plan: not specified

Recovery Plan Doc: not specified

Lessons Learned (if applicable): not specified

NCSD Recommendations: not specified

Infraction: Severity Index: 5
DOE NCS Reportable: No
NC: No
Status: not specified
Closure Date: not specified
Placard Number(s): not specified

Attachment C, Abnormal Event Personal Statement

(Page 1 of 2)

This form is to be filled out by personnel involved in the abnormal event.

Event: Potential Process Deviation (DOP-091 Question)

Event Type:	**Radiological** ☐	**Chemical Spill/Release** ☐	**Personal Injury** ☐
Damaged Equipment ☐	**Criticality Issue** ☐	**TSR/SB Issue** ☐	**Other:** ☒ **Write in description**

Event Date/Time: 07/22/2021/12:30PM | Location:TA-55 PF-4

Person Completing Statement: | **Tristan Karns**

Names of Personnel Involved in Incident:	**Timothy A. Stone**
John T. Davis	**Joshua Narlesky**

Describe Work Environment:

A conference room in TA35 Building 87 that has a Red terminal.

Activities Just Before Event:

A LANMAS query was run for items that are stored inside of either Hagans or SAVYs that are not allowed to be stored in those containers without either a variance or a Transfer Container label applied to the outside.

Appendix 2, Container Weights and Dimensions

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Container Weights

Table A2-1. SAVY 4000 Container Weights, Shielding Weights, & Maximum Package Weights

SAVY 4000 SIZE	SAVY 4000 TARE WT. (kg)	SAVY 4000 WITH INNER SHIELDING ONLY (kg)	SAVY 4000 WITH OUTER SHIELDING ONLY (kg)	SAVY 4000 WITH INNER & OUTER SHIELDING (kg)	MAXIMUM PACKAGE (GROSS) WEIGHT (CONTAINER AND CONTENTS) (kg)
1-QT*	1.5	2.1	2.0	2.6	10.0
2-QT*	2.0	N/A	N/A	N/A	12.2
3-QT*	2.6	4.1	3.7	5.2	15.0
5-QT	3.4	5.5	5.0	7.1	18.1
8-QT	4.2	6.7	6.4	8.9	20.0
12-QT	5.4	8.8	8.5	11.9	22.2
5-GAL	8.6	13.0	N/A	N/A	24.9
10-GAL	11.9	19.0	N/A	N/A	39.9

* Note that 1 Qt, 2 Qt and 3 Qt SAVY 4000 containers have administrative limits for Pu metal/alloy 1.0 kg, 3.0 kg, and 4.5 kg, respectively. See PA-RD-01022 Section 5.1 Table 1.

Table A2-2. Hagan Container Weights, Shielding Weights, & Maximum Package Weights

HAGAN SIZE	HAGAN TARE WT. (kg)	HAGAN WITH INNER SHIELDING ONLY (kg)	HAGAN WITH OUTER SHIELDING ONLY (kg)	HAGAN WITH INNER & OUTER SHIELDING (kg)	MAXIMUM PACKAGE (GROSS) WEIGHT (CONTAINER AND CONTENTS) (kg)
1-QT	1.1	1.7	1.6	2.2	4.4
3-QT	1.8	3.3	2.9	4.4	7.6
5-QT	2.3	4.4	4.0	6.1	12.4
8-QT	3.0	5.5	5.3	7.8	13.1
12-QT	4.3	7.7	7.4	10.8	11

** Note that 1 Qt and 3 Qt Hagan containers have administrative limits for Pu metal/alloy 1.0 kg and 4.5 kg, respectively. See PA-RD-01022 Section 5.1 Table 1.

Table A2-3. Ring Drum Weights, Shielding Weights, & Maximum Package Weights

RING DRUM SIZE	RING DRUM TARE WT. (kg)	RING DRUM WITH INNER SHIELDING ONLY (kg)	RING DRUM WITH OUTER SHIELDING ONLY (kg)	RING DRUM WITH INNER & OUTER SHIELDING (kg)	MAXIMUM PACKAGE (GROSS) WEIGHT (CONTAINER AND CONTENTS) (kg)
5-GAL	3.4	7.9	N/A	N/A	12.4
10-GAL	6.8	15.2	N/A	N/A	34.0
20-GAL	14.1	26.3	N/A	N/A	N/A***

*** 20-GAL are not drop tested and must be stored on the floor. The maximum gross weight is given in the UN label (e.g., 1A2/X160 indicates maximum gross weight of 160 kg).

5.2 Content and Packaging Configuration Requirements for Storage (continued)

Table 4. Restricted Material Forms for Storage Containers

IDC	DESCRIPTION	REASON
C02_ ☒	COMPOUND; Acetate	PRESSURE
C19_ ☒	COMPOUND; Chloride	CORROSION
C39_ ☒	COMPOUND; Tritide	PYROPHORIC
C40_ ☒	COMPOUND; Hydride	PYROPHORIC
C61_ ☒	COMPOUND; Perchlorate	PYROPHORIC
C79_ ☒	COMPOUND; Tetrachloride	CORROSION
C82_ ☒	COMPOUND; Trichloride	CORROSION
G_ _ _ ☒	GAS; All	GAS
K_ _ _ ☒	COMBUSTIBLE; All	COMBUSTIBLE
L_ _ _ ☒	LIQUID; All	LIQUID
M08_ ☒	METAL; Powdered	PYROPHORIC
M76_ ☒	METAL; Alloyed Turnings*	PYROPHORIC
M_ _ J ☒	Metal Turnings*	PYROPHORIC
N69_ ☒	NON-COMBUSTIBLE; Resin	PRESSURE
R12_ ☒	PROCESS RESIDUE; Calcium Metal	PYROPHORIC
R59_ ☒	PROCESS RESIDUE; Oxalate Precipitate	PRESSURE

*Uranium metal turnings are permitted in storage containers when packaged in hermetically sealed inner containers. See Section 5.4.